

REMARKS

Claims 1, 2, 4, 5, and 9 are pending in this application, of which claim 1 is independent.

Claims 1, 2, 4, 5, and 9 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over De Poorter (U.S. Patent No. 5,578,863) in view of Onomura et al. (U.S. Patent Application Publication No. 2002/0039374, hereinafter “Onomura”) and M. Takeya et al. “High-Power AlGaN Lasers for Blue-ray Disc System,” PROC of SPIE, vol. 4995, pgs. 117-122, January 2003 (hereinafter “Takeya”). Applicants respectfully traverse this rejection.

De Poorter, Onomura, and Takeya, individually or in combination, do not disclose or suggest a semiconductor laser device including all the limitations recited in independent claim 1. Specifically, the applied combination of the references does not teach, among other things, that “an atmospheric gas inside the package is a mixture gas containing oxygen and nitrogen, with an oxygen content of more than 20%, and the semiconductor laser device has a MTTF of 3,000 hours or more at 70°C,” as recited in claim 1.

In the Office Action, the Examiner asserted as follows (the first full paragraph on page 4 of the office action):

Takeya et al. disclose: AlGaN laser device with mean time to failure of over 5000 hours under 50mW continuous wave operation at 70°C (page 121, abstract). It would have been obvious to one having ordinary skill in the art at the time the invention was made use the laser device of Takeya in the invention of De Poorter in order to increase the lifetime of the laser device.

Applicants emphasize that simply applying Takeya to De Poorter and Onomura do not arrive at the claimed subject matter. Takeya discloses achieving an MTTF of 5,000 hours “by optimizing the position of the Mg-doped layer and introducing an undoped AlGaN layer between the active layer and the Mg-doped electron-blocking layer” (Abstract). In contrast, claim 1 recites having an MTTF of 3,000 hours or more by using a mixture gas containing oxygen and

nitrogen as an atmospheric gas inside the package with an oxygen content more than 20%. Takeya does not teach or suggest such a concentration of oxygen inside a package, i.e., does not teach achieving the MTTF of 5,000 hours by controlling an oxygen concentration. Even if the combination of De Poorter, Onomura, and Takeya is assumed proper for the sake of this response, the applied combination does not teach at least having the MTTF of 3,000 hours or more by controlling an oxygen concentration. Rather, it may be necessary to apply an arrangement including a Mg-doped layer and an undoped AlGaN layer described in Takeya to De Poorter to achieve the MTTF of 5,000 hours. Such an arrangement appears to be considered unnecessary for De Poorter. Therefore, Applicants believe that it would not have been obvious for a person skilled in the art to conceive the claimed subject matter which has an MTTF of 3,000 hours or more by controlling an oxygen concentration, irrespective of a Mg-doped layer.

Based on the foregoing, De Poorter, Onomura, and Takeya, individually or in combination, do not disclose or suggest a semiconductor laser device including all the limitations recited in independent claim 1. Dependent claims 2, 4, 5, and 9 are also patentably distinguishable over De Poorter, Onomura, and Takeya at least because these claims respectively include all the limitations recited in independent claim 1. Applicants, therefore, respectfully solicit withdrawal of the rejection of the claims and favorable consideration thereof.

Conclusion

If there are any questions regarding this Amendment or the application in general, a telephone call to the undersigned would be appreciated to expedite the prosecution of the application.

To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 500417 and please credit any excess fees to such deposit account.

Respectfully submitted,

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